



Developing the most appropriate Verification Strategy

CompuwareCorporation

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Risk Management and Verification

- **Risk Management is identified as a Project Management Process Area**
 - Risks to achievement of project objectives
 - Involves both Risk Identification and Risk Mitigation
- **Risk Management can be an important tool in Verification processes**
 - Identify probability and consequences of defects
 - Build a Verification Strategy that reduces the probability that defect risk will become a project risk
- **Can also assist in reaching Verification**



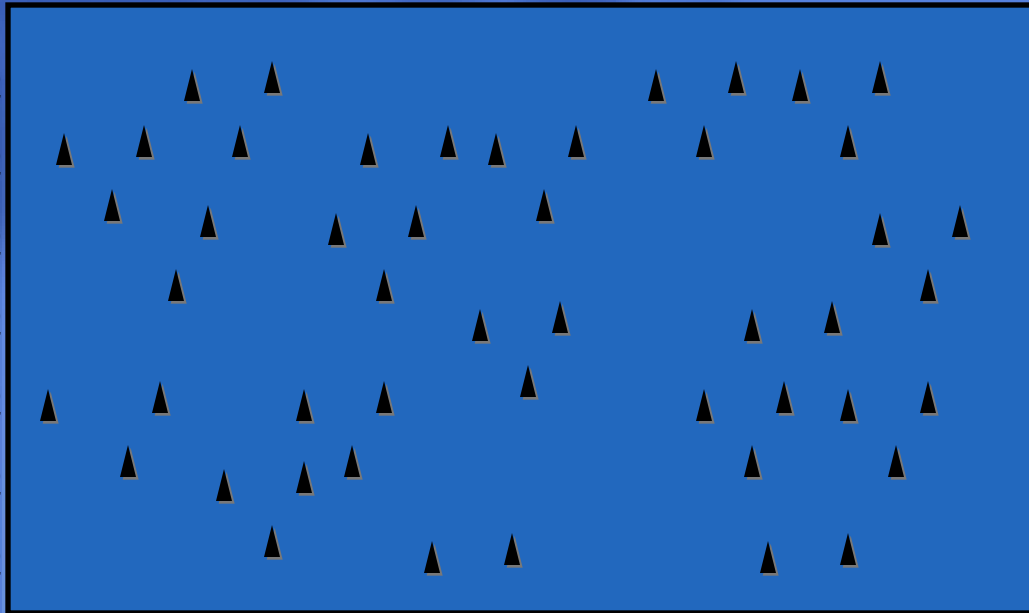
Risk Management in Verification

- **Include a Risk Assessment activity in the Verification Strategy Planning Process**
 - **Determine areas of ‘defect’ risk**
 - **Build a Risk Profile by Requirement**
 - **Use the Risk Profile like a Topographical Map**
 - **Use this map to determine how to apply Verification Activities**



Non-Risk Based

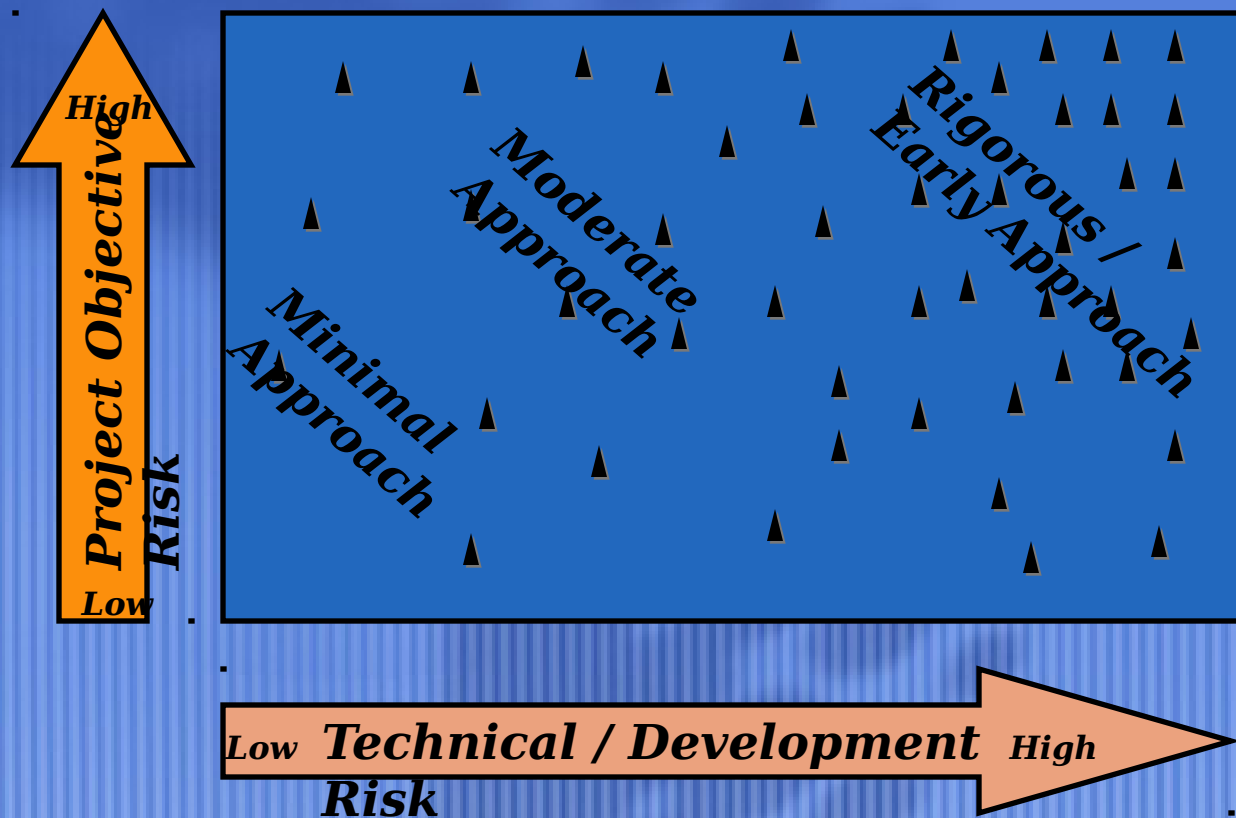
Requirement
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*Environments and Data
Scenarios*



Risk Based





Risk Assessment in the Verification Strategy Process

- **Need a process that is quick and easy**
- **Matrix/Table based**
- **Estimation and assignment of number is 'relative' not 'absolute'**
- **Working for order of magnitude - not pinpoint precision**
- **Profile will emerge through collaboration and communication**



Risk Profile

- **Risk Factors**
 - **Predictors of Risk**
- **Risk Weights**
 - **Balances the Risk Predictors based on experience**



Determining Risk Factors

- **Mix Probability and Risk**
- **Consider all groups**
 - **End-Users, Customers, Clients**
 - **Development**
 - **Testing**
- **Ask other groups for suggested factors**



Examples of Risk Factors

- **'Age' of the element (Requirement)**
- **Complexity of the element**
- **Cross-element integrations**
- **Ties to project objectives**
- **Number of end-users**
- **Prior history of defects**
- **History of element in production**
- **Maturity of the process in the organization that produced it**
- **Politics of the organization**
- **Experience with the technology**



Risk Weights

- **Not all factors predict risk equally**
- **When first assigned just take a stab**
 - **don't expect perfection the first pass**



Rank each Factor for each Element

- **This is collaboration, investigation and negotiation**
- **'Blank Sheet' can be a problem**
- **Focus attention on one or two areas**
- **Use what you did as an example**
- **It does get easier over time - on the first pass just give it your best shot**



Do the Math

- **Score = Weighted Sum**
 - **Sum all (Factor Rank * Factor Weight)**
- **Index = Weighted Average**
 - **Score / Average of Weights**
- **An 'automated' solution can make the math much easier**



Check your work

- **Check the assumptions of your model**
 - Look at 2-3 elements for ‘gut feel’
- **Have someone else look at 2-3 other ones**
 - Build buy-in to the answers



Typical Problems with Model

- **Risk Weights can skew the results**
 - Double check the assumptions on it's predictive ability
- **Not everything is critical**
 - Too many of the same values in a column make the ranking meaningless



Use the Model for the Verification Strategy

- **Items with high risk index should have Verification activities as early as possible**
- **Items with high risk index should have the most Verification activities**
- **Negotiate to get high risk index items developed and delivered as early as possible to provide defect measurement data to predict the remaining risk**
- **Develop more stringent entry and exit criteria for high risk items**
- **Don't totally ignore medium and low risk items - just handle them according to risk**



Questions?

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